

010470



Dart Aerospace Ltd.
1270 Aberdeen St
Hawkesbury, ON
K6A 1K7
Canada

Tel (613) 632-5200
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Deviation

SWA3-2

Job Sheet 195561



Part No: SWA3-2

Job Qty: 1 pcs

Part Name: Electric Swivel 3,000 lb Safe Work Load (1,360 Kg)



Part Weight: 0 lbs

Status: New

Priority: Medium

Job Created: 5/27/19

Job Tracking No:

Due Date: 6/20/19

Created By: Marie Lajeunesse

Type: SOLD

Description: *order 1552*

Note: DWG SWA3 Rev 3 IPP Rev A 18.04.06 DP verified DD

Ship Via:

Bill of Materials

Job Routing

Op No	Operation	Qty	Start Date	Due Date	Standard		Workcenter/Supplier		Sign-off
					Setup Hrs	Run Hrs	Workcenter / Supplier	Lead Time	
90	External Load - 1	1 pcs	6/20/19	6/20/19	0.00	2.00	External Load - 1		<i>AP</i>
							External Load - 2		
							External Load - 3		
110	External Load - 2 - B4B	1 pcs	6/20/19	6/20/19	0.00	2.00	External Load - 1 - B4B		<i>AP 2019/06/24</i>
							External Load - 2 - B4B		
							External Load - 3 - B4B		
120	QC 5	1 pcs	6/20/19	6/20/19	0.00	0.00	QC 5 - 10		
							QC 5 - 12		
							QC 5 - 17		
							QC 5 - 18		
							QC 5 - 19		
							QC 5 - 22		
							QC 5 - 24		
							QC 5 - 3		
							QC 5 - 43		
							QC 5 - 49		
							QC 5 - 51		
							QC 5 - 58		
							QC 5 - 68		
							QC 5 - 9		
							QC 5 - 50		
							QC 5 - 30		
							QC 5 - 40		
130	Packaging 3-1 - Stock - B4B	1 pcs	6/20/19	6/20/19	0.00	0.00	Packaging 3 - 1 - B4B		
							Packaging 3 - 2 - B4B		
							Packaging 3 - 3 - B4B		
							Packaging 3 - 4 - B4B		
							Packaging 3 - 5 - B4B		
							Packaging 3 - 6 - B4B		
							Packaging 3 - 7 - B4B		
							Packaging 3 - 8 - B4B		



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Container No: S191434



Part: SWA3-2

Job No: 195561

Serial No/Batch: S191434

Revision: 3

Inspector:

Exp Date:

Instructions:

Date: 06/18/19

*68-6
30
SVD*

JUN 24 2019

*68-6
30
SVD*

JUN 24 2019

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					Packaging 3 - 9 - B4B	
					Packaging 3 - 10 - B4B	
					Packaging 3 - 11 - B4B	
					Packaging 3 - 12 - B4B	
					Packaging 3 - 13 - B4B	
					Packaging 3 - 14 - B4B	
					Packaging 3 - 15 - B4B	
					Packaging 3 - 16 - B4B	
					Packaging 3 - 17 - B4B	
					Packaging 3 - 18 - B4B	
					Packaging 3 - 19 - B4B	
					Packaging 3 - 20 - B4B	
					Packaging 3 - 21 - B4B	
					Packaging 3 - 22 - B4B	
					Packaging 3 - 23 - B4B	
					Packaging 3 - 24 - B4B	
					Packaging 3 - 25 - B4B	
					Packaging 3 - 26 - B4B	
					Packaging 3 - 27 - B4B	
					Packaging 3 - 28 - B4B	
					Packaging 3 - 29 - B4B	
					Packaging 3 - 30 - B4B	
					Packaging 3 - 31 - B4B	
					Packaging 3 - 32 - B4B	
					Packaging 3 - 33 - B4B	
					Packaging 3 - 34 - B4B	
					Packaging 3 - 35 - B4B	
					Packaging 3 - 36 - B4B	
135	DC - 1 - B4B	1 pcs	6/20/19	0.00 0.00	DC - 1 - B4B	JUN 25 2019
					DC - 2 - B4B	
140	QC 21 - FG	1 pcs	6/20/19	0.00 0.00	QC 21 - FG - 21	JUN 25 2019
					QC 21 - FG - 70	
					QC 21 - FG - 53	
Part Op 90 - -Assemble as per DWG. Sheet 1 ***All assembly to be done in accordance with SWA3 swivel manual*** Engrave T/N Descriptions: And / or S/N number as required Using Marktronic engraver as per DWG. Laser engrave dart logo as per DWG. 110 - -Assemble as per DWG. Sheet 1 ***All assembly to be done in accordance with SWA3 swivel manual*** Engrave T/N And / or S/N number as required Using Marktronic engraver as per DWG. Laser engrave dart logo as per DWG. 120 - (QC5- Inspect part completeness to step on W/O) 130 - (Identify as per dwg & Stock Location: _____) Bag and tag 135 - (Document Control) Photocopy blue file OM & OOPM-SWA3A Rev3 140 - (QC21- Final Inspection - Work Order Release)						

Job BOM

Part / Item	Component Name	Quantity	Operation	Container
188-FPSS-832-3/8	Set Screw	1 Ea (1 ea)	90-External Load - 1	S175966
92210A303	Flat Socket Cap Screw → 188-FSCS-1032-5/8	4 pcs (4 ea)	110-External Load - 2 - B4B	2 S1759682 S168927
EL-PLUG-F	3-Prong Female Spade Plug	1 Ea (1 ea)	110-External Load - 2 - B4B	S151943
EL-PLUG-M	3-Prong Male Spade Plug	1 Ea (1 ea)	110-External Load - 2 - B4B	S175987
EL314-SJTOW	Long Line Electrical Wire, 14/3 Gauge replace w/t 01004-08-047	6 ft (6 ea)	110-External Load - 2 - B4B	S179682
SWA3-100	Upper End - Swa3 Swivel	1 pcs (1 ea)	110-External Load - 2 - B4B	S174084
SWA3-200	Lower End	1 pcs (1 ea)	110-External Load - 2 - B4B	S169352
SWA3-300	Wire Clamp	2 pcs (2 ea)	110-External Load - 2 - B4B	S134854
SWA3-400	Button Head Screw	2 pcs (2 ea)	110-External Load - 2 - B4B	S176939
SWA3-500	Connector Bushing-230	1 pcs (1 ea)	110-External Load - 2 - B4B	S117115
SWA3-600	O-Ring	1 pcs (1 ea)	110-External Load - 2 - B4B	S170462
SWA3-700	Bearing Balls - 1/4"	32 Ea (32 ea)	110-External Load - 2 - B4B	S190494
SWA6A-1900	1/4" Female Spade Connector	4 Ea (4 ea)	110-External Load - 2 - B4B	S175992
SWA6A-900A	Rotary Connector - 2 wire	1 pcs (1 ea)	110-External Load - 2 - B4B	S185290
600.1319	UP DECAL			S173607

Job Allocations

Operation	Component Part	Required	Inventory	Allocated
90-External Load - 1	188-FPSS-832-3/8	1	112	0
110-External Load - 2 - B4B	92210A303	4	32	0
	EL-PLUG-F	1	17	0
	EL-PLUG-M	1	34	0
	EL314-SJTOW	6	0	0
	SWA3-100	1	18	0
	SWA3-200	1	7	0
	SWA3-300	2	33	0
	SWA3-400	2	32	0
	SWA3-500	1	8	0
	SWA3-600	1	29	0
	SWA3-700	32	558	0
	SWA6A-1900	4	187	0
	SWA6A-900A	1	3	0

Part Specifications

Specifications could not be found.

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GREASE AEROSHELL NO.7 (M138964)

LOCTITE 242 (S186572)

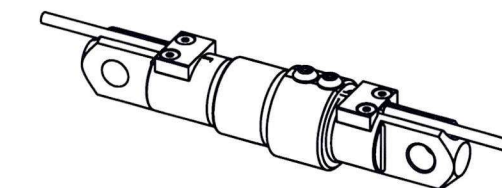
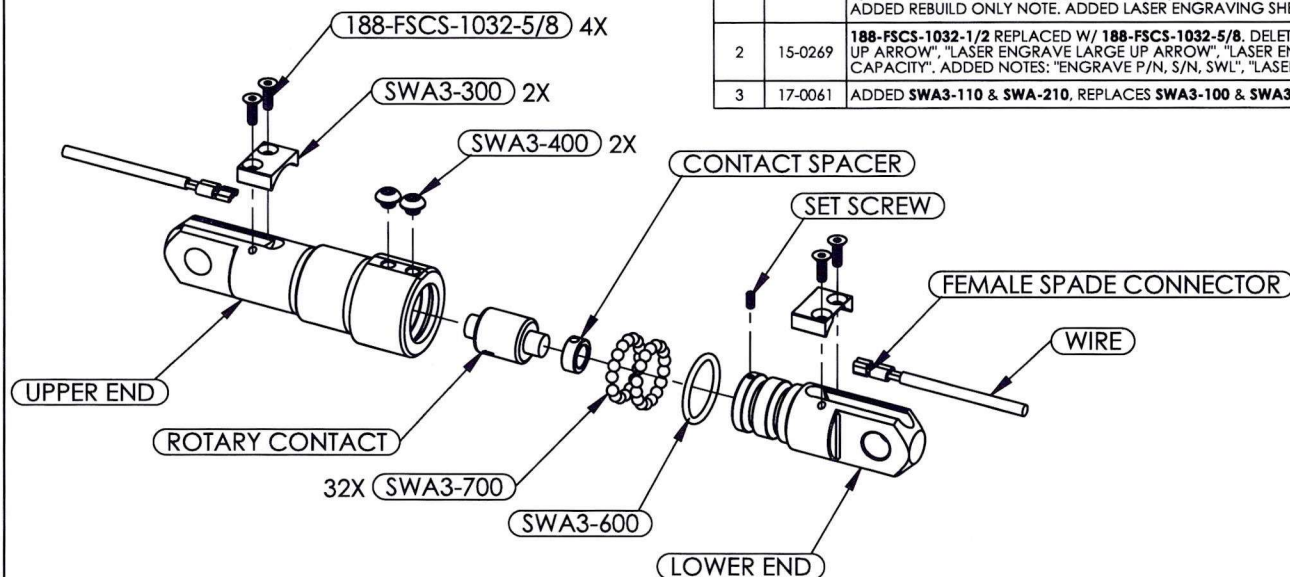
SILICONE GE (M139008)

D2728-1 STICKER (PLACARD) M139013

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REVISIONS

REV	ECR	DESCRIPTION	DATE	INITIAL	APPROVED
A		REPLACED ID DECAL 600.1318 WITH LASER ETCHING	11/16/2012	JAG	
B		REMOVED 2 WIRE HARNESS	8/8/2013	JAG	RW
1	15-0079	UPDATED TO NEW DRAFTING STANDARDS. ADDED SWA6A-2000, 188-FPSS-832-3/8, EL314-SJTOW CH'D QTY'S: -2 ASSY WAS 6 IS 1, -3 ASSY WAS 6 IS 1. ADDED 6 FT. TO B/O INFO. EL404-ARTIC CH'D QTY'S: -4 ASSY WAS 6 IS 1. ADDED 6 FT. TO B/O INFO. SWA6A-1900 CH'D QTY'S: -4 ASSY WAS 8 IS 4. ADDED REBUILD ONLY NOTE. ADDED LASER ENGRAVING SHEET.	4/16/2015	DPD	JAG
2	15-0269	188-FSCS-1032-1/2 REPLACED W/ 188-FSCS-1032-5/8. DELETED NOTES: 2X "LASER ENGRAVE SMALL UP ARROW", "LASER ENGRAVE LARGE UP ARROW", "LASER ENGRAVE DART LOGO P/N S/N CAPACITY". ADDED NOTES: "ENGRAVE P/N, S/N, SWL", "LASER ENGRAVE DART LOGO".	9/23/2015	DPD	JAG
3	17-0061	ADDED SWA3-110 & SWA-210, REPLACES SWA3-100 & SWA3-200 IN -4 ASSY.	3/23/2017	DPD	JAG



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WITHOUT NOTICE
WORK ORDER

NO. 195561 MJS
19-05-27

-2 QTY	-3 QTY	-4 QTY	B/O	Part #	Description	Material	B/O INFORMATION OR SPECIFICATIONS	PG.
1	1	-		SWA3-100	UPPER END			1
-	-	1		SWA3-110	UPPER END			1
1	1	-		SWA3-200	LOWER END			1
-	-	1		SWA3-210	LOWER END			1
2	2	2		SWA3-300	WIRE CLAMP			1
2	2	2		SWA3-400	BUTTON HEAD SCREW			1
1	-	-		SWA3-500	CONTACT SPACER			1
-	1	1		SWA3-500B	CONTACT SPACER			1
1	1	1		SWA3-600	O-RING			1
32	32	32	B/O	SWA3-700	BALL BEARING	S.S.	Ø1/4 MCMaster-CARR #9529K15	1
1	-	-	B/O	SWA6A-900A	ROTARY CONTACT		MERCOTAC #230	1
-	1	-	B/O	SWA6A-900B	ROTARY CONTACT		MERCOTAC #330	1
-	-	1	B/O	SWA6A-900C	ROTARY CONTACT		MERCOTAC #430	1
4	4	4	B/O	188-FSCS-1032-5/8	FLAT SOCKET CAP SCREW	S.S.	10-32 x 5/8 (MCMaster-CARR #92210A303)	1
1	1	-	B/O	EL314-SJTOW	3 WIRE		6 FT. (TEXCAN #EL 314-SJ TOW 3/14)	1
-	-	1	B/O	EL414-ARTIC	4 WIRE		6 FT. (TRUCK & AUTO SUPPLY #EL 414-ARTIC 4/14)	1
-	1	1	B/O	188-FPSS-832-1/4	SET SCREW	18-8 S.S.	8-32 X 1/4 MCMaster-CARR #92311A190	1
1	-	-	B/O	188-FPSS-832-3/8	SET SCREW	S.S.	8/32 X 3/8 (MCMaster-CARR #92311A192)	1
4	6	4	B/O	SWA6A-1900	1/4" FEMALE SPADE CONNECTOR		(MCMaster-CARR #69525K16)	1
-	-	4	B/O	SWA6A-2000	1/8" FEMALE SPADE CONNECTOR		(MCMaster-CARR #69525K14)	1
1	1	1	B/O	600.1319	UP DECAL			N/S
1	1	1	B/O	EL-PLUG-F	FEMALE PLUG	PE High Density	(MCMaster-CARR #7216K6)	1
1	1	1	B/O	EL-PLUG-M	MALE PLUG	PE High Density	(MCMaster-CARR #7216K5)	1

NOTES:

1. ALL ASSEMBLY TO BE DONE IN ACCORDANCE WITH SWA3 SWIVEL MANUAL.

2. FOR CUSTOMER REBUILD ONLY.

DART
AEROSPACE

SWA3 SWIVEL

TITLE

DWG NO.

SWA3

REV
3

MAT'L

HEAT

TREAT

FINISH

SPEC

DRAWN BY:

CANAM

CHECKED:

SM 03/23/2017

OPPS APPR:

AA 03/28/2017

QA APPR:

JL 04/05/2017

APPROVED:

JAG 04/11/2017

SCALE

1:4

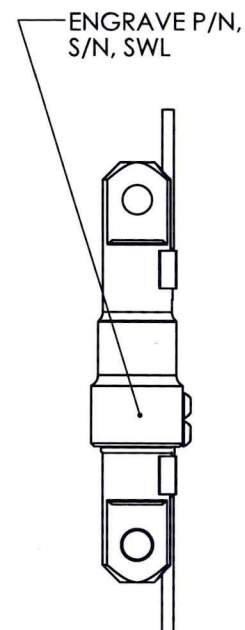
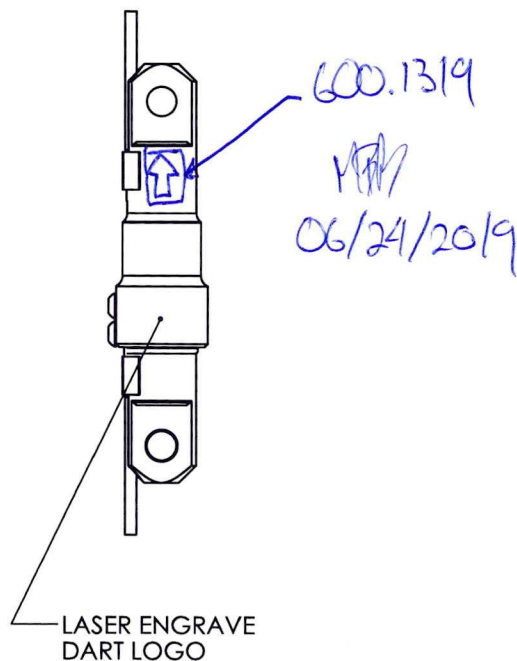
DATE

SHEET 1 OF 2

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
XXX ± .005 FRACTIONS ± 1/8
.XX ± .01 ANGLES ± 5°
.X ± .1 SURFACES = 125°
1. BREAK ALL SHARP EDGES
.015 x 45° OR .015R
2. DIMENSIONAL LIMITS APPLY
AFTER PLATING
3. INTERPRET DIM AND TOL PER
ASME Y14.5M-2009
USED ON MODEL

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REVISIONS					
REV	ECR	DESCRIPTION	DATE	INITIAL	APPROVED
1	15-0079	ADDED LASER ENGRAVING SHEET.	4/16/2015	DPD	JAG
2	15-0269	DELETED NOTES: 2X "LASER ENGRAVE SMALL UP ARROW", "LASER ENGRAVE LARGE UP ARROW", "LASER ENGRAVE DART LOGO P/N S/N CAPACITY". ADDED NOTES: "ENGRAVE P/N, S/N, SWL", "LASER ENGRAVE DART LOGO".	9/23/2015	DPD	JAG



DART AEROSPACE	
TITLE SWA3 SWIVEL	
DWG NO.	REV 3
SWA3	
MAT'L	UNLESS OTHERWISE SPECIFIED
HEAT	DIMENSIONS ARE IN INCHES
TREAT	XXX ± .005 FRACTIONS ± 1/8
FINISH	XX ± .01 ANGLES ± .5°
SPEC	X ± .1 SURFACES = 125
DRAWN BY:	CANAM
CHECKED:	SM 03/23/2017
OPPS APPR:	AA 03/28/2017
QA APPR:	JL 04/05/2017
APPROVED:	JAG 04/11/2017
SCALE	1:4
DATE	
SHEET 2 OF 2	

Entered: _____ Date: _____



WORK ORDER NON-CONFORMANCE / ROUTE UPDATE

NCR No. _____

Route update only ☐

Job: <u>1955G1</u> Part No. <u>SWA3-2</u> <u>Rev. 3</u>	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐	DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Eng. (Non-AW) ☒ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Engineering ☐ Water Jet ☐ Supplier ☐ Quality ☐			
Date: <u>06/24/2019</u>	Sequence #: _____	QTY Affected: _____		MRB (QSI042) <u>ML</u> <u>JUNE 24/19</u>	
Description Work Order Deviation ADD "UPDecal" P/N 600.1319 at approx. shown on sheet 2. Use "Heat Shrink" P/N McMaster #7856K75 on electrical wire and connectors.		Disposition This deviation is acceptable. No change to fit, form, and function.		Completed By <u>A. PATRY</u> Lead hand / Supervisor QC / QA Coordinator	
Root Cause Operator ☐ Manufacturing Process ☐ Equip/Tooling ☐ Handling/Preservation ☐ Material ☒ Product Improvement ☐ Process Improvement ☐ Human Factors ☐		FAULT CATEGORY ☐ Pressure/Forced ☐ Bending ☐ Crushing ☐ Cracks ☐ Crimp/Kink/Ripple/Wave/Twist ☐ Marks/Chatter ☐ Mislabeled ☐ Contamination ☐ Misaligned/off center ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Incomplete/Unclear Instructions ☐ Drill Holes ☐ Fit/Function ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain Direction ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set/Set-up ☐ Positioned Wrong ☐ Outside Tolerance ☐ Drawing ☐ Finish ☐ Part Lost/Missing ☐ Misread			
		Other/Details: _____			



DART.
AEROSPACE

NCR No.

Route update only

H:/FORMS/Quality Assurance\approved QA/NCRWO Rev J

P/N	Revision	Drawing Specified Wire	Acceptable Alternate Wire
C2	2	MIL-C-27500 11-14416	N/A
C3	2	MIL-C-27500 11-14417	N/A
C10	3	3/14 SJTOW	Texcan 01121-734A5 or 01004-08-047
C15	2	3/14 SJTOW	Texcan 01121-734A5 or 01004-08-047
C20	C	3/14 SJTOW	Texcan 01121-734A5 or 01004-08-047
C45	C	3/14 SJTOW	Texcan 01121-734A5 or 01004-08-047
C60	C	3/14 SJTOW	Texcan 01121-734A5 or 01004-08-047
C250	C	3/14 SJTOW	Texcan 01121-734A5 or 01004-08-047
SWA3-2	3	3/14 SJTOW	Texcan 01121-734A5 or 01004-08-047
SWA3-3	3	3/14 SJTOW	Texcan 01121-734A5 or 01004-08-047
SWA3-4	3	EL 414-ARTIC 4/14	Texcan 01121-744A5
SWA6A-2	E	Texcan 01121-724AM	N/A
SWA6A-3	E	Texcan 01121-734A5 or 01004-08-047	N/A
SWA6A-4	E	Texcan 01121-744A5	N/A
SWA6A-6	E	Texcan 04121-764A5	N/A
SWA6A-8	E	Texcan 12701-08-014 or McMaster 7081K38	N/A
SWA10A-2	3	3/14 SJTOW	Texcan 01121-734A5 or 01004-08-047
SWA10A-3	3	3/14 SJTOW	Texcan 01121-734A5 or 01004-08-047
SWA10A-4	3	EL 414 ARTIC 4/14	Texcan 01121-744A5
SWA10A-6	3	EL 616 ARTIC	Texcan 04121-764A5
SWA10A-8	3	Polar Wire 30806	Texcan 12701-08-014 or McMaster 7081K38
SWA15A-2	1	3/14 SJTOW	Texcan 01121-734A5 or 01004-08-047
SWA15A-3	1	3/14 SJTOW	Texcan 01121-734A5 or 01004-08-047
SWA15A-4	1	EL 414 ARTIC 4/14	Texcan 01121-744A5
SWA15A-6	1	EL 616 ARTIC	Texcan 04121-764A5
SWA15A-8	1	EL 816 ARTIC	Texcan 12701-08-014 or McMaster 7081K38
SAW25A-2	1	3/14 SJTOW	Texcan 01121-734A5 or 01004-08-047
SAW25A-3	1	3/14 SJTOW	Texcan 01121-734A5 or 01004-08-047
SAW25A-4	1	EL 414 ARTIC 4/14	Texcan 01121-744A5
SAW25A-6	1	EL 616 ARTIC	Texcan 04121-764A5
SAW25A-8	1	EL 816 ARTIC	Texcan 12701-08-014 or McMaster 7081K38

DQA: _____ Date: _____

**WORK ORDER NON-CONFORMANCE / UPDATE**

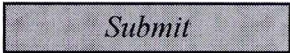
QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: <u>195561</u> Part No. <u>SWA### Swivels</u> NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS <table style="width:100%;"> <tr> <td>Skid-tube ☐</td> <td>Cross tube ☐</td> <td>Water Jet ☐</td> <td>Engineering ☐</td> </tr> <tr> <td>Machining ☐</td> <td>Small Fab ☐</td> <td>Prod. Eng. Coord. ☐</td> <td>Quality ☐</td> </tr> <tr> <td>Thermoforming ☐</td> <td>Finishing ☐</td> <td>Rec/Store/Packaging ☐</td> <td>Other ☐</td> </tr> <tr> <td>Large Fab ☐</td> <td>Composite ☐</td> <td>Supplier ☐</td> <td></td> </tr> </table>				Skid-tube ☐	Cross tube ☐	Water Jet ☐	Engineering ☐	Machining ☐	Small Fab ☐	Prod. Eng. Coord. ☐	Quality ☐	Thermoforming ☐	Finishing ☐	Rec/Store/Packaging ☐	Other ☐	Large Fab ☐	Composite ☐	Supplier ☐																																																	
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Large Fab ☐	Composite ☐	Supplier ☐																																																																					
Date : <u>2019/06/11</u>		Step #: _____		QTY Effective : _____		MRB (QSI042) Approval Feb 01, 2018																																																																	
Description Work Order Deviation - Use a combination of heatshrink tubing and RTV Silicone to create a watertight seal around all electrical connections. - Use a D2728-1 Placard in place of the laser engraved Dart logo				Disposition These deviations are acceptable to carry out on the following swivels: - SWA3 - SWA6A - SWA10A - SWA15A - SWA25A - PSWA25A There is no impact on fit, form or function.				Completed By <u>A. PATRY</u> Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval																																																															
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Work Order 195561Customer 15552Number of Wires 2Date 2019/06/18Serial Number S191434

Number of Cycles	Load (Lbs.)	Action	Pass/Fail
1	3,000	Check for Conductivity against all wires.	- PASS
1	3,000	Check all wires for grounding against swivel body.	- PASS
1	1,500	Check for Conductivity against all wires.	- PASS
1	1,500	Check all wires for grounding against swivel body.	- PASS
1	750	Check for Conductivity against all wires.	- PASS
1	750	Check all wires for grounding against swivel body.	- PASS
1	0	Check for Conductivity against all wires.	- PASS
1	0	Check all wires for grounding against swivel body.	- PASS

Test Conducted By: ALVIN PATRY
TechnicianSignature: Sylvie Pouchet
QC 5 / Small FAB / QASubmit